A Randomized Controlled Open Label Exploratory Trial of CLT-008 (Romyelocel-L) Myeloid Progenitor Cells to Decrease Infections During Induction for AML


[University affiliations and details]

BACKGROUND:

- Patients undergoing induction chemotherapy for AML are at high risk for developing potentially life-threatening infections due to prolonged neutropenia and profound neutropenia, occurring for 1.5–10% induction deaths, and delay antineoplastic therapy.

- CLT-008 (Romyelocel-L) is a cryopreserved ex vivo expanded allogeneic myeloid progenitor cell product (viCPC) therapeutics manufactured by viCPC for induction chemotherapy and intended for patients who experience febrile neutropenia due to prolonged neutropenia.

- CLT-008, infused without T-cell reactivity, is intended to transduce and produce cytokines that mitigate damage by pro-inflammatory cytokines released in patients with acute myeloblastic leukemia (AML), leukemia (ALL), and other hematopoietic stem cell malignancies.

METHODS:

- A Randomized Controlled Open Label Exploratory Trial of CLT-008 (Romyelocel-L) Myeloid Progenitor Cells to Decrease Infections During Induction for AML

- Inclusion Criteria:
  - Adults aged 18 years or older
  - Diagnosed with AML
  - Undergoing induction chemotherapy

- Exclusion Criteria:
  - Severe pre-existing infections
  - Pregnancy

- Interventions:
  - CLT-008: Single dose of 7.5x10⁶ cells/kg on Day 9, 10 or 11
  - Comparator: G-CSF on Day 14

- Primary Endpoints:
  - Time to ANC recovery
  - Length of stay in hospital

- Secondary Endpoints:
  - Effect on infectious complications
  - Use of antibiotics

- Study Design:
  - Randomized controlled open-label trial

- Study Population:
  - 160 subjects recruited

- Study Duration:
  - 28 days

RESULTS:

- Study completed with 159 subjects randomized (84 in the intervention group and 75 in the control group).

- Primary Endpoint:
  - Mean time to ANC recovery in the CLT-008 group was 11.5 days, compared to 13.8 days in the G-CSF group (p = 0.013).

- Secondary Endpoints:
  - Fewer infections in the CLT-008 group compared to the G-CSF group.
  - Reduced use of antibacterials for treatment of infection by 37%.
  - Three days decrease of stay in hospital.

- Safety:
  - No serious adverse events reported.
  - No deaths related to the study treatment.

- Conclusions:
  - CLT-008 is a promising therapy for reducing infections during induction chemotherapy.

Table 1: ASSESSMENT OF CLT-008 CHIMERISM:

- No adverse events observed
- No GVHD
- Allogeneic cells were detected in peripheral blood (PB) post CLT-008 dosing, and during neutropenia (N = 18).

Table 2: Disposition of Subjects (All Randomized Subjects)

<table>
<thead>
<tr>
<th>Group</th>
<th>N (%)</th>
<th>Total (N = 160)</th>
</tr>
</thead>
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<tr>
<td>CLT-008</td>
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<td>160</td>
</tr>
<tr>
<td>G-CSF</td>
<td>75</td>
<td>160</td>
</tr>
</tbody>
</table>

Table 3: Table 2: Disposition of Subjects (All Randomized Subjects)

- Safety Population
  - 160 subjects randomized

Table 4: Table 4: Decrease in MoDC/O2 in CLT-008 Treated Arm (E-subjects)

<table>
<thead>
<tr>
<th>Group</th>
<th>Day 15 – Day 28</th>
<th>% Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLT-008</td>
<td>39 (63.9)</td>
<td>25 (42.4)</td>
</tr>
<tr>
<td>G-CSF</td>
<td>18 (29.5)</td>
<td>11 (18.6)</td>
</tr>
</tbody>
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Table 5: Table 5: Infections, Partial Remission (PR), and Treatment Failure

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Table 6: Table 6: Infections, Partial Remission (PR), and Treatment Failure

- Infections:
  - Bacterial & Fungal
  - Bacterial & Fungal

- Partial Remission (PR):
  - 6 (8.3)
  - 2 (2.9)

- Treatment Failure:
  - 19 (26.4)
  - 21 (30.4)

Table 7: Table 7: Biomarkers

- MoDC/O2:
  - Day 15 to Day 28
  - Day 28 to Day 38

CONCLUSIONS:

- CLT-008 is a promising therapy for reducing infections during induction chemotherapy.

REFERENCES:


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